PENDING CLAIMS AS AMENDED

Please amend the claims as follows:

1. (Currently Amended) In a wireless communication system having a plurality of antennas each directed to one of a plurality of coverage areas, a method comprising:

receiving a first PN-modulated signal from a first sector;

receiving a PN-modulated second signal from a second sector adjacent to said first sector;

introducing a delay between said pair of PN-modulated signals projected to adjacent coverage areas within a given user sector, whereby said PN-modulated signals are decorrelated ~~delaying the second signal to form a delayed second signal~~; and

summing the delayed second PN-modulated signal and the PN-modulated first signal.

2. (Currently Amended) The method as in claim 1, further comprising:

splitting the first PN-modulated signal into multiple parts; and

splitting the second PN-modulated signal into multiple parts.

3. (Currently Amended) The method as in claim 1, wherein summing comprises:

summing one of [the] multiple parts of the first PN-modulated signal with one of the multiple parts of the second PN-modulated signal to form a first summation signal.

4. (Currently Amended) The method as in claim 3, wherein summing further comprises:

summing a second part of the multiple parts of the first PN-modulated signal with a second part of the multiple parts of the second PN-modulated signal to form a second summation signal

5. (Original) The method as in claim 4, further comprising:

generating an In-phase component and a Quadrature component of the first summation signal; and

generating an In-phase component and a Quadrature component of the second summation signal.

6. (Original) The method as in claim 5, further comprising:

generating a despreading code;

despreading the In-phase component and the Quadrature component of the first summation signal with the despreading code;

offsetting the despreading code by a first phase delay to form a delayed despreading code; and

despreading the In-phase component and the Quadrature component of the second summation signal with the delayed despreading code.

7. (Currently Amended) A wireless infrastructure element, comprising:

means for receiving a first PN-modulated signal from a first sector;

means for receiving a second PN-modulated signal from a second sector adjacent to said first sector;

means for introducing a delay between said pair of PN-modulated signals projected to adjacent coverage areas within a given user sector, whereby said PN-modulated signals are decorrelated ~~delaying the second signal to form a delayed second signal~~; and

means for summing the delayed second signal and the first signal.

8. (Currently Amended) A wireless infrastructure element to provide dynamic user sectorization by decorrelating signals received from adjacent coverage areas, comprising:

a plurality of antenna elements, each antenna element associated with a coverage area of a wireless communication system;

a plurality of receive amplifiers, comprising delay elements operably connected to said plurality of antennas, wherein said decorrelating delay is introduced between said signals provided to said adjacent coverage areas, each receive amplifier coupled to one of the plurality of antenna elements;

a switch matrix coupled to the plurality of receive ~~antennas~~ amplifiers; and

a plurality of summation networks coupled to the switch matrix and adapted to receive information from each of the plurality of receive amplifiers.

9. (New) The method of claim 1, further comprising:

varying the size of a set of user vectors between successive system operating periods, comprising:

introducing a delay between said pair of PN-modulated signals projected to adjacent coverage areas within a given user sector, whereby said pair of PN-modulated signals are decorrelated;

discriminating between said PN-modulated signals;

time-aligning said PN-modulated signals; and

despreading using a locally-generated replica of a long PN code.

10. (New) The method according to claim 1, wherein said delay has a duration slightly longer than a period of a chip of a PN long code used to decorrelate said PN-modulated signals.

11. (New) A method of accommodating variations in user demand within a cell, comprising:

dynamically varying sectors of the cell.

12. (New) The method of accommodating variations in user demand within a cell according to claim 11, wherein said step of dynamically varying sectors of the cell comprises varying an allocation of traffic channels among various user sectors within the cell.

13. (New) The method of accommodating variations in user demand within a cell according to claim 11, wherein said step of dynamically varying sectors of the cell comprises changing a geographic extent of user sectors based on demand.

14. (New) The method of accommodating variations in user demand within a cell according to claim 11, wherein said step of dynamically varying sectors of the cell comprises altering a beam pattern by dynamically varying a number of fixed antenna beams used to carry traffic channels associated with said user sector.

15. (New) The method of accommodating variations in user demand within a cell according to claim 13, wherein said step of dynamically varying sectors of the cell further comprises:

varying a number of traffic channels allocated to a particular user sector.

16. (New) A base station communications transceiver, comprising:

a controller;

an antenna system operably connected to said controller;

at least one transmit/receive channel bank electromagnetically coupled to said antenna system, whereby said transmit/receive channel banks supply beam-forming signals to said antenna system so as to sectorize a first cell into a plurality of user sectors, each of which has associated therewith a plurality of user traffic channels;

a control bus operably connected between said controller and said at least one transmit/receive channel bank, whereby statistics relating to channel use are conveyed to said controller by said at least one transmit/receive channel bank.

17. (New) The base station communications transceiver according to claim 16, wherein each channel bank comprises at least one channel unit capable of facilitating communication with a particular user.

18. (New) The base station communications transceiver according to claim 16, wherein said antenna system comprises at least one set of fixed-beam antenna elements; whereby said antenna system alters a beam pattern by dynamically varying a number of said fixed antenna beams used to carry traffic channels associated with a user sector.

19. (New) The base station communications transceiver according to claim 16, wherein said base station communications transceiver is adapted to accommodate variations in user demand within a cell, by dynamically varying sectors of the cell.

20. (New) The base station communications transceiver according to claim 19, wherein said base station communications transceiver is further adapted to dynamically varying sectors of the cell by varying an allocation of traffic channels among various user sectors within the cell.

21. (New) The base station communications transceiver according to claim 19, wherein said base station communications transceiver is further adapted to dynamically varying sectors of the cell by changing a geographic extent of user sectors based on demand.

22. (New) The base station communications transceiver according to claim 19, wherein said base station communications transceiver is further adapted to dynamically varying sectors of the cell by varying a number of traffic channels allocated to a particular user sector.

23. (New) A base station receiver network configured to provide dynamic user sectorization by decorrelating delays between signals received from adjacent coverage areas, comprising:

a plurality of antennas;

a first plurality of amplifiers comprising delay elements operably connected to said plurality of antennas, wherein said decorrelating delay is introduced between said signals provided to said adjacent coverage areas;

at least one switch matrix operably connected to said first plurality of receive amplifiers, whereby information from user sectors are routed to users within said coverage areas;

a plurality of summation networks operably connected to said at least one switch matrix;

a plurality of receivers operably connected to said plurality of summation networks, whereby received signals are downconverted and digitized into composite I and Q components;

a PN long code generator for providing said long PN code to said receivers operably connected to said plurality of receivers; and

phase delay elements for offsetting said PN long codes by a predetermined margin operably connected to said plurality of receivers;

24. (New) The base station receiver according to claim 23, further comprising a second plurality of amplifiers operably connected between said plurality of receivers and said plurality of said summation networks.

25. (New) The base station receiver according to claim 23, wherein said plurality of receivers comprises at least one RAKE receiver.

26. (New) The base station receiver according to claim 23, wherein said delay element is a surface acoustic wave filter.

27. (New) The base station receiver according to claim 23, wherein said delay is equivalent to 768 chips.

28. (New) The base station receiver according to claim 25, wherein said RAKE receiver comprises a plurality of modulators.

29. (New) A base station transmitter configured to provide dynamic user sectorization by introducing delays between signals projected to any pair of adjacent coverage areas, comprising:

a plurality of transmitters, whereby baseband information signals to be transmitted over traffic channels associated with a plurality of user sectors are processed;

a PN long code generator for providing said long PN code to said transmitters operably connected to said plurality of transmitters;

a plurality of amplifiers operably connected to said plurality of transmitters;

a plurality of splitters operably connected to said plurality of amplifiers;

at least one switch matrix operably connected to said plurality of splitters, whereby information from user sectors are routed to users within said coverage areas;

a plurality of antenna drivers operably connected to said at least one switch matrix; and

a plurality of antennas operably connected to said plurality of antenna drivers, each of said plurality of antennas being operative to project a beam over one of the coverage areas.

30. (New) The base station transmitter according to claim 29, wherein said antenna drivers comprise phase delay elements for offsetting said PN long codes by a predetermined margin.

31. (New) The switch matrix according to claim 29, comprising a plurality of digital controlled attenuators.

32. (New) The switch matrix according to claim 29, wherein said plurality of antennas are dual-mode antennas.

33. (New) The base station transmitter according to claim 29, wherein said antenna drivers comprise phase equalizers.

34. (New) The base station transmitter according to claim 29, further comprising at least one power combiner operably connected in series with a plurality of antenna cables, wherein said at least one power combiner is operably connected to said antenna drivers and said plurality of antenna cables is operably connected to said plurality of antennas.

35. (New) The base station transmitter according to claim 29, further comprising at least one power combiner operably connected in between said plurality of amplifiers and said plurality of splitters.

36. (New) The base station transmitter according to claim 30, wherein said phase delay element is a surface acoustic wave filter.

37. (New) The switch matrix according to 32, wherein said dual mode antenna is a dual-mode resonant patch antenna.

38. (New) The base station transmitter according to claim 34, wherein said antenna drivers comprise phase equalizers, wherein at least one of said phase equalizers may be adjusted until an output of said power combiner is optimized.

39. (New) The base station transmitter according to claim 34, wherein said antenna drivers comprise phase delay elements for offsetting said PN long codes by a predetermined margin.

40. (New) The base station transmitter according to claim 35, wherein said antenna drivers comprise phase equalizers, wherein at least one of said phase equalizers may be adjusted until an output of said power combiner is optimized.

41. (New) The base station transmitter according to claim 39, wherein said phase delay element is a surface acoustic wave filter.